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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,976	12/01/2003	Bill Arndell	WUR 50906/US/2	1877

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EXAMINER

YAO, SAMCHUAN CUA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/724,976

Applicant(s)

ARNDELL ET AL.

Examiner

Sam Chuan C. Yao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I (claims 1-17 and 21-23) in the reply filed on 12-13-05 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-13, 16-17 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/44803 in view of Cone et al (US 4,115,178), and vice versa.

WO '803, drawn to making a engineered lumber composite using a moisture-curable isocyanate adhesive, substantially discloses the process recited in these claims. Note: the moisture-curable isocyanate adhesive of WO '803 is identical to the adhesive used in the present invention as disclosed in numbered paragraphs 25 and 53 of Applicant's disclosure. WO '803 differs from these claims in that WO '803 does not teach using "*a ribbon coating apparatus*" for applying an adhesive onto a surface of a veneer. However, it would have been obvious in the art to use "*a ribbon coating apparatus*" for applying a foamable moisture-curable isocyanate adhesive onto a surface of a veneer, because: a) Cone et al, drawn to a process of making a plywood from wood veneers, teaches the desirability of

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applying continuous or discontinuous foamable adhesive ribbons using a ribbon coating apparatus (onto a surface of a veneer (col. 1 line 9 to col. 2 line 68; figures 1-8); and, b) a foamable polyisocyanate adhesive is notoriously well known in the art.

Alternatively, Cone et al substantially discloses the process recited in claim 1.

While Cone teaches using various foamed adhesives such as a phenol-formaldehyde, resorcinol-formaldehyde, etc. and is open to using *“any foamable liquid glue”* (col. 3 lines 1-9), it would have been obvious in the art to use a moisture-curable isocyanate adhesive of WO '803 in the process of Cone et al, because WO '803, drawn to making an engineered lumber from wood veneers, discloses problems with using conventional adhesives such as phenol-formaldehyde (page 1), and suggests using a moisture-curable adhesive comprising a polyisocyanate and *“an isocyanate-reactive component comprising at least one aliphatic tertiary amine group-containing polyol made by alkoxylation or amines or aminoalcohols”* (claims 1-20). As for the dependent claims 2-13 and 16-17, the limitations in these claims are substantially disclosed in WO '803.

With respect to claim 21, absent any showing of unexpected result, one in the art would have determined, by routine experimentation, a workable/optimal amount of adhesive needed to effectively bond wood veneer layers. Moreover, the recited amount of adhesive in a wood laminate is old in the art.

With respect to claims 22-23, see figure 1 of the Cone et al where it clearly shows that adhesive dispensers 12a-12c is spaced-apart from wood veneers and

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deposit a plurality of separate (i.e. discrete) adhesive strands onto a wood veneers.

4. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth above as applied to claim 6 or 7 above, and further in view of either Robitschek et al (US 4,403,013) or National Evaluation Report (dated 11-2002) on LINESTAR™ Adhesives such as LINESTAR™ 4800 adhesive.

While a polyisocyanate adhesive of WO '803 contains a free NCO content of 10-29% (page 5 lines 4-10) and a functionality of at least 2 since it is an NCO terminated prepolymer, WO '803 appears to be silent on the viscosity of the adhesive. However, it would have been obvious in the art to formulate an adhesive such that its viscosity is at least around 1000 cps, because Robitschek et al, drawn to a process of making plywoods, teaches the desirability of formulating a foamable adhesive such that its adhesive is around 1000-20,000 cps (abstract; col. 1 lines 9-50). **Alternatively**, it would have been obvious in the art to use a LINESTAR™ 4800 adhesive in making an engineered lumber from wood veneers, because it is old in the art to use a LINESTAR™ 4800 adhesive, for fabricating LVL composite, as exemplified in a disclosure in National Evaluation Report on LINESTAR™ Adhesives, wherein this adhesive is similar to the one taught by WO '803. Since a LINESTAR™ 4800 adhesive has a viscosity of 3000 cps, it would have been obvious in the art to formulate moisture curable isocyanate adhesive such that it has a viscosity of around 3000 cps.

Response to Arguments

5. Applicant's arguments filed on 12-13-05 have been fully considered but they are not persuasive.

On page 7 full paragraph 1, Counsel argued that, "... Examiner has not articulated a motivation ... to combine WO '803 and Cone with a reasonable expectation of success with respect to claim 1." Accordingly, WO '803 teaches away from using a foamable adhesive, because "WO '803 teaches that "foamed materials are ***generally weak*** and do not perform adequately." (originally bold-faced and italicized). Examiner strongly disagrees. First of all, WO '803 is drawn to making adhesively bonded wood veneers. Cone teaches a process for bonding wood veneers using a foamed adhesive. The teachings of Cone clearly shows that there is a reasonable expectation of success to use a foamable adhesive for bonding wood veneers. Moreover, in discussing the disadvantage of using a foamable polyisocyanate adhesive for bonding wood members, WO '803 is talking about the EP 0723561 patent (page 2 line 31 to page 3 line 19). The EP '561 publication is directed to process for making an adhesively bonded veneer (page 1 lines 13-22; page 10 line 24 to page 11 line 7). Hence, EP '561 is another publication, which clearly shows veneers can successfully be bonded using a polyisocyanate foamed adhesive. Equally important, it is quite clear from the teachings of WO '803 that "*the performance of foamed materials*" can readily be enhanced by adding a filler to the foamed materials (page 3 lines 1-19). Therefore, the alleged weak bond in using a foamable adhesive can readily

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be obviated by incorporating a filler material to the foamable adhesive. Note: the claims as presently recited do not preclude adding a filler to a polyisocyanate adhesive composition.

As for Counsel's argument on page 7 last paragraph, regarding the rejection of method claims under 35 USC 103 over Cone in view of WO '803, Examiner strongly disagrees with Counsel's assertion that there is no showing of reasonable expectation of success. Cone, which is the primary reference, bonds veneers using a foamed adhesive.

On page 8, Counsel basically reiterated Counsel's previous argument that there is suggestion, presumably because there is no reasonable expectation of success, to use a ribbon coating apparatus for bonding veneers using a polyisocyanate adhesive. Examiner strongly disagrees. Not only there is a reasonable expectation of success for using foamed adhesive strands in bonding veneers, but also a strong incentive for one in the art to use foamable adhesive strands for bonding wood veneers. The foamed adhesive strands can be effective in filling irregular cavities on a veneer surface, thereby substantially fully coating the veneer surface. See figures 3-5 of the Cone et al patent.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

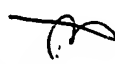
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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571) 272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Richard Crispino can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

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01-09-06